U.S. Patent Application No. 09/147,362
Attorney Docket No. P63163US0

**Amendments to the claims:**

The listing of the claims will replace all prior versions, of claims in the application:

**Listing of claims:**

Claims 1-54 (canceled)

55. (New) Synthetic peptides in linear form, or cyclized by means of inter-cysteine disulphide bridges, having the general formula (I):

$$\Delta\text{-Z-Trp Gly Cys-}\Theta\text{-Cys Tyr Thr Ser-}\Omega \qquad (I)$$

wherein:

- $\Delta$ is selected from the group consisting of a biotinyl radical, a biocytinyl radical, a hydrogen atom, an acetyl ($CH_3CO$-) radical, an aliphatic chain which may contain one or two thiol, an aldehyde functional group and an amine functional group,

- Z is a peptide sequence selected from the group consisting of:

Leu Leu Ser Ser (SEQ ID NO: 21),

Leu Leu Asn Ser (SEQ ID NO: 22),

Arg Leu Asn Ser (SEQ ID NO: 23),

Ala Leu Glu Thr Lu Leu Gln Asn Gln Gln Leu Leu Asn Ser (SEQ ID NO: 24),

Ala Leu Glu Thr Leu Leu Gln Asn Gln Gln Leu Leu Asp Leu (SEQ ID NO: 25),

Ala Leu Glu Thr Leu Leu Gln Asn Gln Gln Leu Leu Asn Ile (SEQ ID NO: 26),

Leu Asn Gln Gln Arg Leu Leu Asn Ser (SEQ ID NO: 27), and

Arg Ala Leu Glu Thr Leu Leu Asn Gln Gln Arg Leu Leu Asn Ser (SEQ ID NO: 28),

- Θ is a peptide sequence selected from the group consisting of:

  Arg Gly Arg Leu Ile (SEQ ID NO: 15),

  Arg Gly Arg Leu Val (SEQ ID NO: 16),

  Arg Gly Lys Leu Ile (SEQ ID NO: 17),

  Arg Gly Lys Leu Val (SEQ ID NO: 18),

  Lys Gly Arg Leu Ile (SEQ ID NO: 19), and

  Lys Gly Arg Leu Val (SEQ ID NO: 20),

- Ω, attached to the -CO- group of Ser, is selected from the group consisting of:

  a hydroxyl group and

  a peptide sequence of formula

  Val – Ψ,

  (Val Arg Trp Asn Glu Thr-Ψ,
  Val Gln Trp Asn Glu Thr-Ψ, and
  Val Gln Trp Asn Ser Thr-Ψ,)

  SEQ NOS

  wherein Ψ, attached to the -CO- residue of Val or Thr, is selected from the group consisting of a OH group, a $NH_2$ group, and an alkoxy radical comprising from 1 to 6 carbon atoms.

**56.** (New) Synthetic peptides of formula (I) according to claim 55 wherein Δ represents an aliphatic chain, said aliphatic chain being selected from the group consisting of an alkyl chain of

1 to 6 carbon atoms, an alkenyl chain of 2 to 6 carbon atoms, and an aminoalkylcarbonyl chain of 2 to 6 carbon atoms.

57. (New) Synthetic peptides of formula (I) according to claim 55 including one of the following sequences:

LLSLWGCRGRLVCYTSVQWNET

or

Leu Leu Ser Leu Trp Gly Cys Arg Gly Arg Leu Val Cys Tyr Thr Ser Val Gln Trp Asn Glu Thr (SEQ ID NO: 2),
1 5 10 15 20 22

G1

LLSSWGCKGRLVCYTSVQWNET

or

Leu Leu Ser Ser Trp Gly Cys Lys Gly Arg Leu Val Cys Tyr Thr Ser Val Gln Trp Asn Glu Thr (SEQ ID NO: 3),
1 5 10 15 20 22

LLSSWGCKGRLVCYTSVQWNST

or

Leu Leu Ser Ser Trp Gly Cys Lys Gly Arg Leu Val Cys Tyr Thr Ser Val Gln Trp Asn
1 5 10 15 20
Ser Thr (SEQ ID NO: 4),
22

LLQSWGCKGRLVCYTSVQWNST

or

Leu Leu Gln Ser Trp Gly Cys Lys Gly Arg Leu Val Cys Tyr Thr Ser Val Gln Trp Asn
1 5 10 15 20
Ser Thr (SEQ ID NO: 5),
22

G1

LLSSWGCRGRLVCYTSVQWNET

or

Leu Leu Ser Ser Trp Gly Cys Arg Gly Arg Leu Val Cys Tyr Thr Ser Val Gln Trp Asn
1 5 10 15 20
Glu Thr (SEQ ID NO: 8),
22

LLSSWGCKGRLVCYTS

or

Leu Leu Ser Ser Trp Gly Cys Lys Gly Arg Leu Val Cys Tyr Thr Ser (SEQ ID NO: 9),
1 5 10 15

LLNSWGCKGRLVCYTS

or

Leu Leu Asn Ser Trp Gly Cys Lys Gly Arg Leu Val Cys Tyr Thr Ser (SEQ ID NO: 10),
1 5 10 15

ALETLLQNQQLLNSWGCRGRLVCYTSVRWNET

or

Ala Leu Glu Thr Leu Leu Gln Asn Gln Gln Leu Leu Asn Ser Trp Gly Cys Arg Gly
1 5 10 15
Arg Leu Val Cys Tyr Thr Ser Val Arg Trp Asn Glu Thr (SEQ ID NO: 11),
20 25 30

ALETLLQNQQLLNIWGCRGRLVCYTSVRWNET

or

Ala Leu Glu Thr Leu Leu Gln Asn Gln Gln Leu Leu Asn Ile Trp Gly Cys Arg Gly
1 5 10 15
Arg Leu Val Cys Tyr Thr Ser Val Arg Trp Asn Glu Thr (SEQ ID NO: 12),
20 25 30

ALETLLQNQQLLDLWGCRGRLVCYTSVRWNET

or

Ala Leu Glu Thr Leu Leu Gln Asn Gln Gln Leu Leu Asp Leu Trp Gly Cys Arg Gly
1 5 10 15

Arg Leu Val Cys Tyr Thr Ser Val Arg Trp Asn Glu Thr (SEQ ID NO: 13),
20 25 30

LNQQRLLNSWGCKGRLVCYTSV

or

Leu Asn Gln Gln Arg Leu Leu Asn Ser Trp Gly Cys Lys Gly Arg Leu Val Cys Tyr
1 5 10 15
Thr Ser Val (SEQ ID NO: 14),
20

RALETLLNQQRLLNSWGCKGRLVCYTSV

or

Arg Ala Leu Glu Thr Leu Leu Asn Gln Gln Arg Leu Leu Asn Ser Trp Gly Cys Lys
1 5 10 15
Gly Arg Leu Val Cys Tyr Thr Ser Val (SEQ ID NO: 15),
20 25

RLNSWGCKGRLVCYTSV

or

Arg Leu Asn Ser Trp Gly Cys Lys Gly Arg Leu Val Cys Tyr Thr Ser Val (SEQ ID NO: 16).
1 5 10 15

**58.** (New) Composition containing at least one synthetic peptide of formula (I) according to claim 55, said peptide being freeze-dried or diluted in water.

**59.** (New) Composition according to claim 58 containing, as the at least one synthetic peptide of formula (I), SEQ ID NO: 3 and SEQ ID NO: 1.

**60.** (New) Composition containing at least one synthetic peptide of formula (I) according to claim 55 and at least one group O HIV-1 recombinant peptide.

**61.** (New) Composition containing at least one synthetic peptide of formula (I) according to claim 55, and at least one HIV-1 and/or HIV-2 recombinant or synthetic peptide.

**62.** (New) Immunoassay method for detecting a group O HIV-1 infection comprising the steps of:

a) obtaining a sample from a patient likely to contain anti-group O HIV-1 antibodies:

b) contacting at least one synthetic peptide of formula (I) according to claim 55, detectably labeled, with said sample;

c) detecting the presence or absence of a complex between said peptides and said antibodies;

d) optionally assaying the amount of said antibodies in the sample; wherein the presence of a complex between said peptides and said antibodies is indicative of a group O HIV-1 infection.

63. (New) Immunoassay method for detecting a group O HIV-1 infection comprising the steps of:

a) obtaining a sample from a patient likely to contain anti-group O HIV-1 antibodies;

b) contacting a composition according to claim 58, containing at least one synthetic peptide of formula (I), detectably labeled, with said sample:

c) detecting the presence or absence of a complex between said peptides and said antibodies; and

d) optionally assaying the amount of said antibodies in the sample;

wherein the presence of a complex between said peptides and said antibodies is indicative of a group O HIV-1 infection.

64. (New) Diagnostic kit for the detection of group O HIV-1 specific antibodies comprising

a) a first container comprising at least one synthetic peptide of formula (I) according to claim 55 and

b) a second container comprising appropriate means of detection of complexes between said antibodies and said peptide.

65. (New) Diagnostic kit for the detection of group O HIV-1 specific antibodies comprising

a) a first container comprising a composition according to claim 58 and

b) a second container comprising appropriate means of detection of complexes between said antibodies and said peptide.